

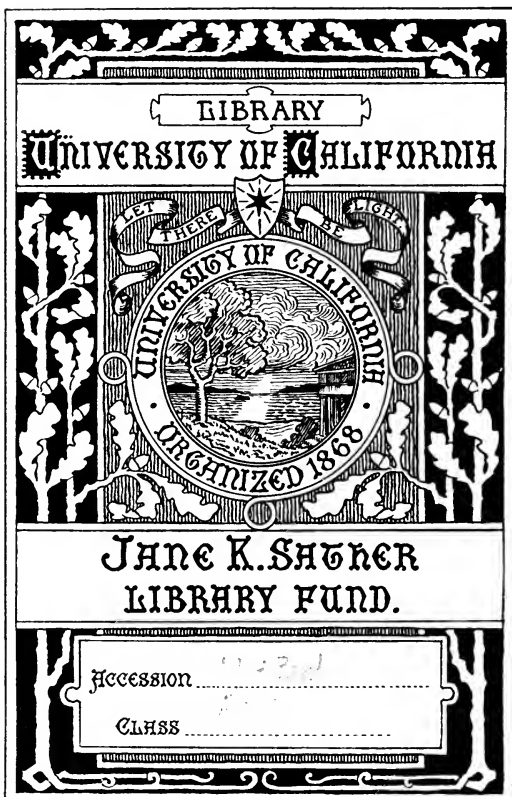
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THE RESTORED PRONUNCIATION  
OF GREEK AND LATIN:

WITH TABLES AND PRACTICAL ILLUSTRATIONS

BY

EDWARD VERNON ARNOLD, Litt.D.,

PROFESSOR OF LATIN AT THE UNIVERSITY COLLEGE OF NORTH WALES;

LATE FELLOW OF TRINITY COLLEGE, CAMBRIDGE,

AND

ROBERT SEYMOUR CONWAY, Litt.D.,

PROFESSOR OF LATIN IN THE UNIVERSITY OF MANCHESTER;

LATE FELLOW OF GONVILLE AND CAIUS COLLEGE, CAMBRIDGE,

VICE-PRESIDENT OF THE CLASSICAL ASSOCIATION.

THIRD AND REVISED EDITION

*(embodying the scheme approved for Latin by the Classical Association).*

CAMBRIDGE:  
AT THE UNIVERSITY PRESS.  
1907.

*Price One Shilling.*



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## PREFACE TO THE THIRD EDITION.

**I**N issuing a third and revised edition of this pamphlet, we think it may be convenient to give a short account of the movement which it is designed to assist.

As early as 1871 attention was called in authoritative quarters to the unsatisfactory standards of Latin pronunciation in vogue in the United Kingdom, and a definite reform was advocated with the support of such eminent names as those of H. A. J. Munro and Edwin Palmer. This proposal was received with some favour by the English Universities and public schools, with the result that the reformed pronunciation was recognised as a permissible alternative. In practice, however, it was seldom adopted, and appeared only to increase the existing confusion.

When the University of Wales was founded in 1893, almost simultaneously with the creation of a great number of schools which provided instruction in Greek and Latin, it felt itself called upon to deal with this question. Whatever excuses might be found in England for indecision in dealing with a long-standing tradition, it could not be expected that a new educational system should be burdened with hesitations on so practical a question: least of all in a country in which the reformed pronunciation of most of the symbols concerned was already familiar in the native language. Accordingly with the support of our colleagues we drew up and published this pamphlet in 1895, the circumstances leading us to make use almost exclusively of the English, French, and Welsh languages to illustrate the pronunciation proposed. The scheme was officially adopted by the University, and has since been in regular use in the Principality: and this experience has shown that, whatever difficulties a change may cause to teachers accustomed to a different system, the system itself causes none to learners who are by it initiated to the study of Latin.

During the last ten years the reform movement has steadily gained strength in England also. New grammars and school books

have familiarised Latin teachers in all parts with the proposed change: and their representative associations have with practical unanimity declared in its favour. The restored pronunciation of Latin is now advocated by the Philological Societies of Oxford and Cambridge, and by the Associations of Assistant Masters and of Assistant Mistresses: it has been adopted with practical unanimity at a numerously attended meeting of the Classical Association recently held in Manchester: and the Classical Association of Scotland gives its support on behalf of that part of the kingdom. Within the last few weeks the Headmasters' Conference has by a decisive vote declared in its favour: and we trust that this re-issue of our pamphlet will help to minimise any inconvenience that may be felt in what remains of the period of transition.

The reform of Greek pronunciation necessarily lags behind that of Latin, and its intrinsic difficulties are greater. The proposals that we made in 1895 have passed through the test of practice, and have in the main been found feasible. Difficulty, however, is attached to insistence on the 'narrow' pronunciation of  $\epsilon$ , the 'broad' pronunciation of  $\omega$ , and the pure 'aspirate' values of  $\theta$ ,  $\phi$ ,  $\chi$ . In the present edition we have thought it well to allow a certain latitude in the pronunciation of  $\epsilon$  and  $\omega$ , and we have taken a new departure with regard to the 'aspirates.' Some recently discovered evidence (of which an account is given in an Appendix for which, as generally for the statements relating only to Greek, Professor Conway is responsible) has made it probable that the pronunciation of these sounds had become, in part at least, that of fricatives as early as the fourth century B.C.; and we therefore propose that the pronunciation of that century rather than of the preceding should be accepted as the standard, and reproduced with such approximation to accuracy as circumstances permit. It should perhaps be explained that our scheme embodies proposals circulated in draft, as a basis for discussion, to the members of the Classical Association by the Pronunciation Committee appointed by the Council of that body, but not yet finally recommended by the Committee nor considered by the Association.

The science of phonetics has made such great advances in recent years that it is necessary for us to make it clear that we are not attempting a scientific treatise on the historical pronunciation of either language. Thus we have left out of account numerous



details and distinctions which, though scientifically important, do not greatly concern our immediate purpose. We gladly welcome the efforts made by teachers of modern languages to spread a more precise appreciation of the niceties of correct pronunciation, but we do not think it practicable or desirable to set up such exacting standards for Latin and Greek, in teaching which our dominant purpose must always be to bring pupils into acquaintance and communion with the great authors in whose pages Greek and Latin for ever live and speak.

We desire to acknowledge gratefully the assistance we have received from many friends in the preparation of this pamphlet. Prof. J. P. Postgate and Prof. J. Strachan, though in no way responsible for its final form, have generously submitted it to a searching revision, which has removed many obscurities and some errors. And as regards the pronunciation of the modern languages used in illustration, we are especially indebted to Prof. A. H. Fynes-Clinton, Prof. J. Morris Jones, Mr T. Rea, and Dr Frederic Spencer.

The books which we have most often consulted are the following :

H. Sweet, *Primer of Phonetics*, Oxford, 1890, *Authorities chiefly consulted.*  
 and *History of English Sounds*, Oxford, 1888. A. J. Ellis, *Early English Pronunciation*, London, 1869. *Phonetics.*  
 W. Rippmann, *Elements of Phonetics*, London, 1903 (after Vietor).  
 And an important paper by Prof. W. W. Skeat, *The Testimony of English to the Pronunciation of Latin*, in *Camb. Philol. Soc. Proceedings*, 1905, p. 3.

[More detailed technical information will be found in E. Sievers *Grundzüge der Phonetik*, Leipzig, 1901 (5<sup>te</sup> verbesserte Auflage); W. Vietor, *Elemente der Phonetik des Deutschen, Englischen und Französischen* (5<sup>te</sup> Auflage), Leipzig, 1904; O. Jespersen, *Lehrbuch der Phonetik* (Leipzig and Berlin, 1901).]

K. Brugmann, *Griechische Grammatik* (3<sup>te</sup> Auflage) in I. Müller's *Handbuch der Altertumswissenschaft*, Band *Greek.*  
 2, Munich, 1900. G. Meyer, *Griechische Grammatik* (3<sup>te</sup> Auflage), Leipzig, 1887. F. Blass, *Greek Pronunciation* (translated by Purton), Cambridge, 1890.

✓ Max Niedermann, *Précis de Phonétique Historique du Latin*, Paris, 1906. Emil Seelmann, *Aussprache des Latin.*  
*Latin*, Heilbronn, 1885. W. M. Lindsay, *The Latin Language*, Oxford, 1894 (or, better, the *Short Latin Historical*

*Grammar* by the same author, Oxford, 1896). W. Meyer-Lübke, *Grammaire des Langues romanes* (traduction française), Paris, 1890—1906. E. Bourciez, *Précis de Phonétique française*, Paris, 1885. H. J. Roby, *A Latin Grammar from Plautus to Suetonius*, part i, fourth edition, London, 1881. A. J. Ellis, *Quantitative Pronunciation of Latin*, London, 1874.

[A convenient summary of the principal points is found in Professor J. P. Postgate's *New Latin Primer*, revised edition, London, 1890. See especially §§ 251—256. A. Bos, *Petit traité de prononciation latine*, Paris, 1893, and F. Sommer, *Handbuch der Lateinischen Laut- und Formenlehre*, Heidelberg, 1902, should also be mentioned.]

E. V. A.

R. S. C.

BANGOR }  
MANCHESTER } January, 1907.



## THE PRONUNCIATION OF GREEK AND LATIN.

It is proposed in the following pages that the method of pronunciation which is almost universal in England in the case of Greek, and still widely prevalent in the case of Latin, should be abandoned. This

*Objections  
to the local  
English pro-  
nunciation.*

method, like others which prevail locally in various parts of Europe and America, chiefly finds acceptance from the immediate convenience of giving to the symbols of the Roman alphabet when used to write Latin, and the corresponding symbols in Greek, the sound which is most commonly denoted by the former in the particular locality. But even this convenience is delusive, since the pronunciation of English varies greatly in different parts of the kingdom, and, as will be seen, where the standard or London pronunciation is most carefully inculcated, there the result is, in fact, furthest from the true Latin sounds. A Scotch or Yorkshire lad will pronounce Latin *ũ* much more correctly, and distinguish it far more clearly from Latin *ǣ*, if left to his own instincts than if trained by a cultured teacher who adopts the unreformed method. Any method of this kind altogether disregards historical accuracy, and ac-

customs the learner to fancy that languages exist as written rather than as spoken: for he is put to no trouble to discover the true sounds of the language he is studying. It is to him in a very real sense a 'dead' language: he ceases or never begins to realise that by its help men and women lived, felt, and thought: and is directly encouraged in a mistake which defeats the very purpose of his education, the mistake of regarding books as something remote from life rather than as an integral part of the life of mankind and therefore of that for which he himself is preparing.

But the local 'English' method of pronouncing Latin and Greek must be condemned also on the following more definite grounds, which involve consequences smaller in themselves but obviously and immediately mischievous:

(1) It confuses distinct sounds, and hence distinct words: e.g. *ceu* and *seu*, *caedit*, *cēdit* and *sēdit*, *caecae*, *caesae* and *sēsē*, *noscet*, *nosset* and *nocet*, *lūceo*, *lūsio* and *Lūcio* (to say nothing of *so-lūtio*), *κεῖται* and *χαῖται*, *καὶνῶ*, *κεῖνῶ* and *κινῶ* are pronounced alike.

(2) It obscures quantity: *mensīs* (abl. plur.) is pronounced as *mensīs* (gen. sing.), and very often *mensă* (nom. sing.) just as *mensā* (abl. sing.): *mălum* (evil) and *mālum* (apple) are made alike, and so *věnit* (present tense) and *vēnit* (perfect). The same confusion occurs in the case of Greek, though not to the same extent.

These two defects largely conceal from the student the musical and rhythmical beauties of the two languages.

(3) The learner acquires by ear at the very beginning false views as to the relations of languages, and, in particular, fails to recognise the intimate natural tie between Latin and the Romance languages. Thus Latin *a* instead of being pronounced as French *a* is made to sound more nearly like French *ei*, following the common value of English *a*.

In this way the historical study of language meets with a needless obstacle even in tracing in a Romance language, such as French, those words which are most immediately derived from Latin.

(4) A somewhat similar suggestion has especial importance in Wales. The sounds used in the Welsh language are on the whole, and particularly as regards the vowels, of a simpler and more primitive character than those of English: and their expression in the written form is a permanent record of the direct influence of Latin civilisation upon the Welsh people. The 'English' method of pronouncing Latin tends to push out of sight this important historical relationship.

In any attempt to frame a better system, two conditions should be fulfilled. On the one hand, the scheme proposed should present, if our knowledge can secure it, at least a reasonable approximation to the sounds which actually existed in ancient times: and on the other, it should avoid placing any really serious difficulty in the way of beginners in Latin or Greek. For it must always be the principle of the study of these languages that the learner shall, as soon as possible, begin to read for himself the works of the great classical authors.

The progress of philological research has made it possible to meet the first requirement. We can in the main reproduce with certainty the sounds actually heard at Athens in the fourth century B.C. and at Rome in the first. The margin of doubt that remains, though from the scientific point of view it is considerable, is nevertheless, when seen from the standpoint of the practical teacher, confined within very narrow limits.

For example: some scholars may feel a doubt whether Latin *ī* more nearly resembled French (close) *i* in *fil* (= Eng. *ee* in *queen*) or Italian (open) *i* in *cività*; but that it was immeasur-

*Conditions  
of a satisfac-  
tory reform:  
accuracy and  
ease of ac-  
quirement.*

*Accuracy.*

ably nearer to Eng. *ee* (though strictly considered this is a diphthongal sound) than to the English diphthong *ī* in *line*, *tide*, etc. is clearly demonstrable and universally admitted.

Accordingly in drawing up the Tables, we have kept in view the distinction between variations of greater and less importance, and have inserted approximate illustrations of some of the sounds from languages where precise equivalents were not easily found: whilst we have tried to guard against any misunderstanding by pointing to more exact equivalents in other columns. We venture to hope that the use of a fairly complete series of English, French and Welsh illustrations side by side may enable even beginners to attain to an approximately correct pronunciation of Greek and Latin, while incidentally rendering some slight service to the teaching of modern languages also.

In the second place, after careful discussion, and some years' *Ease of ac-* experience, we feel that the scheme now proposed  
*quirement.* offers no difficulty that can reasonably be called serious even to the English-speaking student: while those who are familiar with spoken Welsh (or French) should find it far easier than the local English method. In one or two cases some difficulty may be felt, especially while the system is somewhat new to the teacher: and slight deviations from the best standard will be better left uncorrected when the effort to correct them would produce either an error in the opposite direction, or real danger of misunderstanding in the oral work of a class. Such difficulties occur from time to time in any system, and are especially numerous and embarrassing in that which has been so far usual in England.

It may indeed be felt that the difference between the pronunciation of Latin and Greek here advocated and that which is actually adopted in most parts of England is in itself a serious embarrassment. But this difficulty is likely

to diminish in extent before long. The Oxford and Cambridge Philological Societies have united with the Classical Association in advocating the system of Latin Pronunciation contained in this pamphlet; and the Pronunciation Committee of the Classical Association has put forward proposals for the reform of Greek Pronunciation which have been also here embodied. The Head Masters' Conference has adopted the restored Latin pronunciation: the two Associations of Assistant Masters and Assistant Mistresses have recommended it, and it is already familiar in many schools and lecture-rooms. It has also the support of the Modern Languages Association. Most of the reforms that we advocate in Greek, especially in the pronunciation of the vowels and diphthongs, have been long in use in more than one Scotch University, and, as we learn from Professor Goodwin<sup>1</sup>, are adopted with something like uniformity in America.

For these reasons we consider that the difficulties involved are of a transient character, and far smaller than those brought about by the present position of uncertainty. But on the other hand, the restored pronunciation has the advantage not only in distinctness and scientific accuracy, but also in simplicity and musical character. Written explanations must always be to some extent tedious and incomplete: but if once an oral tradition is established amongst teachers, it will be maintained with no greater sense of effort than must always be needed by those who, rejecting slipshod and inartistic methods of speech, aim at inspiring the most constant of our occupations with the instincts of force, precision and beauty.

*Conclusion.*

<sup>1</sup> *Greek Grammar*, New Edition, 1894 (Macmillan), Preface, p. vii.

## TABLE OF GREEK SOUNDS.

The letters which give the equivalents in English, French and Welsh are printed in **heavy** type. Examples enclosed in square brackets contain only rough equivalents.

Greek	English	French	Welsh
ᾱ	<i>foot<b>path</b>, a<b>h</b>a</i>	<i>chasse</i>	<b>aber</b> , <b>llan</b>
ᾗ	<i>f<b>a</b>ther</i>	<i>â<b>m</b>e</i>	<b>tad</b>
β	<b>b</b> ut	<b>bon</b>	<b>baner</b>
γ	always as <b>g</b> et, <b>g</b> one	<b>g</b> âteau	<b>g</b> ardd, <b>g</b> ynt
except <sup>1</sup> that			
γγ	are as {	{	<i>Bangor</i> (not as in <i>angor</i> , <i>tyngu</i> ) <b>llangc</b>
γκ			
δ	[ <b>d</b> en] <sup>2</sup>	<b>d</b> ette	<b>d</b> u
ε (close ε̃)	[ <b>g</b> et] <sup>3</sup>	<b>et</b> , <b>é</b> té	[ <b>cegin</b> ] <sup>4</sup>
ζ	[ <b>glaze</b> ] <sup>5</sup>		
η (open ē)	{ nearer to <i>bea</i> r than to <i>ta</i> ke	<i>père</i> , <i>il mène</i>	<i>hen</i> <sup>4</sup>
‘ (spiritus asper)	<b>hoard</b>		<b>hardd</b>
’ (spiritus lenis) denotes the absence of the spiritus asper in initial vowels.			
θ (see below)			
ι	<i>hit</i>	<i>vérité</i>	<b>dim</b>
ί	<i>queen</i>	<i>fil</i> , <i>église</i>	<b>hin</b>
κ	<b>cat</b> , <b>come</b>	<i>éclat</i> , <i>cour</i>	<b>ci</b> , <b>coed</b>
λ	<b>let</b>	<b>lit</b>	<b>gweled</b>
μ	<b>man</b>	<b>mère</b>	<b>mam</b>
ν	<b>name</b>	<b>nom</b>	<b>nid</b>
ξ	<b>text</b>	<b>fixer</b>	<b>bocs</b>
ο (close ο̃)	<i>cannot</i> , <i>consist</i>	[ <i>monologue</i> ]	[ <i>colyn</i> , <i>pont</i> ] <sup>4</sup>
π	<b>pit</b>	<b>parler</b>	<b>pen</b>
ρ	[ <i>herring</i> ]	[ <i>chéri</i> ]	<b>carreg</b>
ῥ	[ <i>tree</i> ]	<i>théâtre</i>	<b>rhwng</b>



$\sigma, \varsigma$	always as	<b>s</b> alt, <b>m</b> ouse	<b>s</b> avant, <b>r</b> usse	<b>n</b> os
	except that			
$\sigma\beta$	are as	$\left\{ \begin{array}{l} \text{has } \mathbf{b}een \\ \text{has } \mathbf{g}one \\ \text{has } \mathbf{m}ade \end{array} \right.$		
$\sigma\gamma$				
$\sigma\mu$				
$\tau$		[ <b>t</b> en, <b>t</b> in] <sup>2</sup>	<b>t</b> ête	<b>t</b> an
$\upsilon$			<b>du</b> pain, <b>lut</b> te	[North Welsh pump]
$\bar{\upsilon}$			<b>dû</b> , <b>rue</b>	[North Welsh [German grün] <b>cun</b> ]
$\phi$	see below			
$\chi$				
$\omega$ (open $\bar{o}$ )		$\left\{ \begin{array}{l} \text{nearer to } \mathbf{o}re \\ \text{than to } \mathbf{c}oke \end{array} \right.$	<b>enc</b> ore	<b>pob</b> <sup>4</sup>

### The Aspirates $\theta$ , $\phi$ , $\chi$ .

There is some reason for thinking that in the fourth century B.C. even in Athens the aspirates  $\theta$ ,  $\phi$ ,  $\chi$  contained more than the pure combination of  $t + h$  (Eng. *anthill*),  $p + h$  (Eng. *uphill*),  $k + h$  (Eng. *backhanded*); that is, that though the  $h$  was still clearly heard, the first part of the sound was no longer a plosive ( $t$ ,  $p$ ,  $k$ ), but a plosive beginning to change towards a fricative (e.g. in  $\phi$  something between the plosive  $p$  and the full 'affricate'  $pf$ ). Further details will be found in the Appendix. The Committee of the Classical Association have as yet made no recommendation as to the pronunciation that should be given to  $\theta$ ,  $\phi$ ,  $\chi$ ; but this view suggests a

<sup>1</sup> A further probable exception, of no great importance, is mentioned on p. 13 below.

<sup>2</sup> For the slight variation in English  $t$ ,  $d$  from the dentals in the Romance languages, see p. 12 below.

<sup>3</sup> Greek  $\epsilon$  was a 'close'  $e$  (see p. 16 below), and may be more nearly heard in the usual pronunciation of *college*, or in the old-fashioned pronunciation of *engine*, *engineer*, *entire*, than in the approximate examples given in the table, which contain a more 'open' sound. It was the short sound corresponding in quality to the  $\epsilon$  of *êts*, see below.

<sup>4</sup> Welsh  $e$  and  $o$  are open or 'half-open' sounds, both when short and long: but the degree of openness appears to vary slightly in different districts. See p. 16 below.

<sup>5</sup> But  $\zeta$ , which in the fifth century B.C. had a sound like English  $zd$  (e.g. in *glazed*), remained always a double consonant, making the preceding syllable long by position.

possible compromise between the aspirate and the fricative pronunciations, namely, that they should be sounded as fricatives with an added *h*:

$\theta$  as Eng. *bath-house*, *sleuth-hound*;

$\phi$  as Eng. *knife-handle*;

$\chi$  as Scotch *loch-head*.

#### DIPHTHONGS ENDING IN $\iota$ .

These should be pronounced simply by combining the sounds of their component vowels.

Thus

$a\iota = a + \iota$ . Roughly as Eng.  $\bar{a}$  in *ride*, more exactly Fr. *ail* in *email*, Welsh *ai* in *taid*.

$o\iota = o + \iota$ . Eng. *oi* in *oil*, Welsh *oi* in *troi*.

$u\iota = u + \iota$ . Roughly as Fr. *ui* in *lui*. It rarely occurs save before vowels and then  $u$  has its regular sound and the  $\iota$  is simply equivalent to the Eng. consonant *y*.

$\bar{a}, \eta, \varphi = \bar{a} + \iota$  (Welsh *ae* in *caer*),  $\eta + \iota, \omega + \iota$  (Welsh *oe* in *coed*) respectively.

The  $\iota$  was probably not pronounced at all in  $\alpha$  and  $\varphi$  after about 200 B.C., just as in modern spoken S. Welsh *ae* and *oe* are pronounced (in Glamorganshire) simply as Welsh  $\bar{a}$  and  $\bar{o}$ .

The sound of  $\epsilon\iota$  was originally diphthongal (Welsh *ei*, half-way between Eng. *lay* and *lie*), but by about 450 B.C. it had become simply equivalent to a long  $\epsilon$  ('long close *e*') = Eng. *a* in *day*, pronounced without the final *y*-sound. It was however distinguished from  $\eta$  down to at least the 2nd century B.C., and from  $\eta$  down to at least the end of the 4th century; and if there is any risk of the sounds being confused, it may be necessary to allow  $\epsilon\iota$  to be pronounced as Eng. **eye**, though this is certainly incorrect.

#### DIPHTHONGS ENDING IN $u$ .

These should be pronounced by combining the sound of their first vowel with that of Latin *u* (= Eng. *u* in *full*, Welsh

*w* in *cwm*), not with that of the Attic *v*, which when it stood alone had undergone a change that it had resisted when preceded by another vowel.

Thus

$av = a +$  Latin *u*, as Welsh *aw* in *llawn*, nearly as Eng. *ou* in *round*, *ow* in *fowl*.

$ev = \epsilon +$  Latin *u*, as Welsh *ew* in *mewn*. The nearest equivalent existing in English is *ew* in *new*, but the first element of this is an *ι*- instead of an *ε*-vowel.

$ov = \omega +$  Latin *u*, but is of rare occurrence.

The sound of *ou* was originally diphthongal (Eng. *o* in *stone*, see p. 16), but it became in Attic before 450 B.C. equivalent to a long *o* ('long close *o*,' French *o* in *chose*), and then, becoming still closer, to a long Latin *u* (Eng. *oo* in *moon*, Welsh *w* in *gwr*).

#### ACCENT.

For the value of the Greek signs of accent see below, p. 18.

#### NOTE.

The exact nature of the sound or sounds represented in early Attic writers by  $\sigma\sigma$ , in later writers by  $\tau\tau$ , has not yet been precisely determined, though it is practically certain that it denoted some sound closely akin to those which in English we write *sh* (French *ch*) and *ch* (Ital. *c* before *i* and *e*), see Witton, *Am. Journ. Phil.* XIX. p. 420 and Postgate, *Classical Review*, Dec. 1906. Until a more decisive result is reached, we must be content to give the symbols the sound of a double  $\sigma$  and a double  $\tau$  respectively; such inaccuracy as we may be committing in this pronunciation is as great as, but no greater than, the corresponding inaccuracy in spelling allowed by the Athenians themselves.

## TABLE OF LATIN SOUNDS.

THE letters which give the equivalents in English, French and Welsh are printed in **heavy** type. Examples enclosed in square brackets contain only rough equivalents.

Latin	English	French	Welsh
<b>a</b>	<i>foot<b>path</b>, a<b>h</b>a</i>	<i>ch<b>as</b>se</i>	<i>a<b>ber</b>, ll<b>an</b></i>
<b>ā</b>	<i>f<b>a</b>ther</i>	<i>â<b>m</b>e</i>	<i>ta<b>d</b></i>
<b>b</b>	<i>b<b>u</b>t</i>	<i>bo<b>n</b></i>	<i>ba<b>ner</b></i>
<b>bs</b> as <b>ps</b> , <i>ur</i> <b>bs</b> as <i>urps</i>			
<b>c</b> always as	<i>cat, k<b>i</b>tten</i>	<i>éclat, cour</i>	<i>coed, ci</i>
<b>d</b>	[den] <sup>1</sup>	<i>de<b>tt</b>e</i>	<i>du</i>
<b>e</b> (open ĕ)	<i>ge<b>t</b></i>	<i>be<b>rg</b>er</i>	<i>pe<b>n</b></i>
<b>e</b> (close ē)	[bay, ba <b>ne</b> ] <sup>2</sup>	<i>passée</i>	[he <b>n</b> ] <sup>3</sup>
<b>f</b>	<i>fo<b>x</b></i>	<i>fi<b>fr</b>e</i>	<i>ffo<b>n</b></i>
<b>g</b> always as	<i>ge<b>t</b>, go<b>n</b>e</i>	<i>gâteau</i>	<i>gar<b>dd</b>, gy<b>nt</b></i>
<b>h</b>	<i>ho<b>ard</b></i>		<i>ha<b>rd</b>dd</i>
<b>i</b>	<i>hi<b>t</b></i>		<i>di<b>m</b></i>
<b>ī</b>	<i>que<b>en</b></i>	<i>fi<b>l</b>, égl<b>is</b>e</i>	<i>hi<b>n</b></i>
<b>i</b> consonant	<i>yo<b>k</b>e</i>	<i>ba<b>ta</b>illon</i>	<i>ia<b>ith</b></i>
<b>l</b>	<i>le<b>t</b></i>	<i>li<b>t</b></i>	<i>gwe<b>l</b>ed</i>
<b>m</b>	<i>ma<b>n</b></i>	<i>mère</i>	<i>ma<b>m</b></i>
<b>n</b>	<i>na<b>m</b>e</i>	<i>no<b>m</b></i>	<i>ni<b>d</b></i>
<b>n</b> before <b>c</b> , <b>g</b> , <b>q</b> }	<i>so<b>ng</b><sup>4</sup></i>		<i>llan<b>gc</b></i>
<b>o</b> (open ō)	<i>do<b>t</b></i>	<i>reco<b>nnu</b></i>	<i>po<b>nt</b></i>
<b>ō</b> (close ō)	[lo <b>w</b> , lo <b>ne</b> ] <sup>2</sup>	<i>cho<b>s</b>e, cha<b>ud</b></i>	[po <b>b</b> ] <sup>3</sup>
<b>p</b>	<i>pi<b>t</b></i>	<i>pa<b>r</b>ler</i>	<i>pe<b>n</b></i>
<b>qu</b>	<i>qu<b>i</b>z</i>	<i>qu<b>oi</b></i>	

<b>r</b>	[ <i>herring</i> ]	[ <i>chéri</i> ]	<i>carreg</i>
<b>s</b> always as	<i>hiss, pace, manse</i>	<i>savant, russe</i>	<i>nos</i>
<b>t</b>	[ <i>tin</i> ] <sup>1</sup>	<i>tête</i>	<i>tan</i>
<b>u</b>	<i>pull, wood</i>	<i>nouvelle</i>	<i>cwm</i>
<b>ū</b>	<i>pool, wooed</i>	<i>résoudre</i>	<i>cwn, gwr</i>
<b>u</b> consonant <sup>5</sup>	<i>wine</i>	<i>Nord-Ouest</i>	( <i>g</i> ) <i>weled</i>
<b>x</b>	<i>text</i>	<i>fixer</i>	<i>bocs</i>

The following sounds, used in Latin in words borrowed from the Greek, are to be pronounced as in Greek :

Latin	Greek	English	French	Welsh
<b>y</b>	υ		<i>du pain</i>	[North Welsh <i>pump</i> ]
<b>ȳ</b>	υ		<i>dû, rue</i>	[North Welsh <i>cun</i> ]
			[German <i>grün</i> ]	
<b>z</b>	ζ	} see p. 7.		
<b>ch</b>	χ			
<b>ph</b>	φ			
<b>th</b>	θ			
<b>rh</b>	ρ	[ <i>tree</i> ]	<i>théâtre</i>	<i>rhung</i>

<sup>1</sup> Latin and French *t*, *d* are more strictly dental than the corresponding English sounds.

<sup>2</sup> Latin *ē* may be obtained from English *a* in *bay, bane* by omitting the *i* sound which follows immediately on the English vowel: and so *ō* from English *o* in *low, lone* by omitting the *u* sound. English *air, oar* give the corresponding open vowels. See further p. 16 below.

<sup>3</sup> Welsh *e* and *o* are open or 'half-open' sounds, both when short and long: but the degree of openness appears to vary slightly in different districts.

<sup>4</sup> Accordingly Latin *ng* corresponds to the double sound ('*ng*' + *g*) in English *finger*, and not to the single sound heard in *singer*: to Welsh *ng* in *Bangor*, not in *tyngu*.

<sup>5</sup> A distinctive symbol *v* is still often found in Latin printed texts, although *j* for the *i* consonant has been generally abandoned. These distinctive symbols for the consonants came gradually into use towards the end of the Middle Ages, when the sounds had undergone considerable change (see p. 14), and had become comparatively remote from those of the corresponding vowels.

## DIPHTHONGS.

These should be pronounced simply by combining the sounds of their component vowels. Thus

Latin	English	French	German	Welsh
<b>ae</b> <sup>1</sup>	[ <i>side</i> ]	<i>émail, bataillon</i>		<i>taid</i>
<b>oe</b>	<i>boil</i>		<i>häuser</i>	<i>troi</i>
<b>ui</b>	[ <i>ruin</i> ]	[ <i>oui</i> ]		[ <i>mwyn</i> ]

(The vowel-sounds in *ruin*, etc., if run closely together, will correspond to Latin **ui** in *huic*, *cui*.)

<b>au</b>	<i>cow</i>	<i>haus</i>	<i>llawn</i>
<b>eu</b>	[ <i>new</i> ]		<i>mewn</i>

(English *new* would be in Latin letters *niu*: but if we substitute the sound of *e* for that of *i*, we obtain the Latin diphthong.)

<sup>1</sup> See p. 17.

## EXPLANATIONS OF SOME POINTS IN PHONETICS.

These remarks are intended as comments upon the tables of Greek and Latin pronunciation, amplifying the very brief directions there given. They aim only at dealing with certain practical difficulties, and not at presenting even the elements of the Science of Phonetics. Technical terms in common use are therefore not, as a rule, explained. Fuller information may readily be found in the recognised text-books of Phonetics (see the list of authorities in the Preface).

The plosive or momentary sounds are found written almost uniformly in modern European languages: those common to Greek and Latin with them are  $\pi$  *p*,  $\tau$  *t*,  $\kappa$  *c* (breathed sounds) and  $\beta$  *b*,  $\delta$  *d*,  $\gamma$  *g* (voiced sounds).

But *t* and *d* are more strictly dental in the modern Romance languages than in English or German, where they are formed rather above than on the teeth; and in this particular the Romance and Welsh sounds correspond more closely to Greek  $\tau$  *t*, Latin *t* *d*.

Besides these six sounds Greek possessed aspirates, and Latin used them in words borrowed from Greek:  $\phi$  *ph*,  $\theta$  *th*,  $\chi$  *ch*. These also were originally plosive sounds, only differing from the corresponding breathed sounds  $\pi$  *p*,  $\tau$  *t*,  $\kappa$  *c*

respectively in adding a slight emission of breath, in sound like the English *h*, before the next vowel or consonant in the word. They were gradually replaced by the continuous (fricative or 'spirant') sounds which appear in modern Greek, as well as in other European languages, such as *ph=f* in English, French and Welsh, *th* in English and Welsh, *ch* in Welsh and German. On the date at which this change began in Attic Greek, see the Appendix.

These fricatives are not the only modern weakenings of the plosives of classical times: and in English and other modern European languages (though not in Welsh) *c*, *g*, *t* have come, in certain positions, to represent weakened and continuous sounds, for which other symbols also stand. Thus English *city*, *gin*, *nation* are pronounced just as if *sity*, *jín*, *nashun* were written. These secondary values of modern *c*, *g*, *t* are in no case to be given to the corresponding Greek or Latin symbols.

*Modern  
values (in  
some cases)  
of c, g, t.*

Amongst continuous sounds the nasals *m* and *n* corresponding to the voiced *b* and *d* are found in all European languages: but observe that Greek *ν* and Latin *n* may perhaps have more closely resembled the sound heard in modern French and other Romance languages, and have been more strictly dental than English, Welsh, or German *n*. The nasal corresponding to *g* is found in English and Welsh, and written *ng*. In Latin and Greek the sound is heard before the sounds *κ c* (*q*), *γ g*, *χ ch* (in Greek probably also before *μ* and *ν*, though certainly not before *m* and *n* in Latin). It is denoted by *γ* in Greek, by *n* in Latin. Hence Greek *γγ* (for example) = Latin *ng* = English or Welsh *ng + g*, or *ng* in the examples given in the tables.

*Continuous  
consonants.*

(a) *Nasals.*

Final *m* was pronounced lightly in Latin. In verse, when the next word began with a vowel, we find the vowel before *-m* elided: yet when the next word began with a consonant, the syllable ending in *-m* is counted long by position. The best explanation seems to be that the *-m* was so far weakened, that when a vowel followed, the *-m* was only heard as a nasal affection of the vowel before it, such as is given to *o* and *a* in French *bon*, *plan*: and therefore the vowel was subject, like others, to elision. The exact sound before following consonants is doubtful (see Lindsay, *Lat. Lang.* p. 61). For class purposes it seems sufficient to pronounce *m* as in English, but rather more lightly when it occurs at the end of a word.

There is some variety in modern languages in the sounds denoted by *r* and *l*: but in most they are voiced sounds clearly pronounced, and *r* is trilled. Yet English *r* is always a weak sound, and often entirely inaudible: and even English *rr* represents only imperfectly the full sound of Greek  $\rho$ , Latin *r*.

A breathed sound corresponding to the voiced *r* is found in Greek  $\rho$ , Latin *rh* (in words borrowed from Greek or Celtic), Welsh *rh* and French *r* in certain positions<sup>1</sup>, as in *théâtre*. This sound can often be recognised in the pronunciation of the English *tree*.

In most modern languages the symbols *s* *z* are found to represent a breathed and a voiced sibilant respectively. But (c) *s*. whilst Welsh on the one hand possesses the *s* sound only, English on the other frequently employs the voiced or *z* sound, even where *s* is written: so that *lies* comes to rhyme with *size*, and *cheese* with *freeze*: whilst the breathed sound (when final) is often represented by *ce* or *se*, as in *pace*, *manse*. Greek  $\sigma$  (except before  $\beta$ ,  $\gamma$  and  $\mu$ ) and Latin *s* always, represent the breathed sounds, and care should be taken to give them this value even when final; for example, the endings of *οἶτος* and *rēgēs* should not be pronounced as in English *toes* and *gaze*, but as in *dose* and *chase*.

In Latin a consonant as well as a vowel value was given to each of the symbols *I*, *V*: but that the consonantal sound (d) *i* (*j*), *u* (*v*). could not have differed widely from the vowel in either case is shown by the easy passage from one to the other; as, for example, in *silvae* (*silvae*) and *silvae* (*siliuae*); *neue* (*neve*) and *neu*; and by the well-known play on words between *caue ne eas* (*cave ne eas*) and *cauneas* 'figs from Caunus.'

The sounds given to *j* in English and French respectively, and to *v* in most European languages (Welsh *f*), are historical developments of Latin consonantal *i* (*j*), and *u* (*v*), as well as of other sounds: but they are much later in date than the classical period, and should not be introduced in reading classical Latin.

The number of distinct vowel sounds used in modern European languages is very considerable, whilst the number of symbols available is relatively much smaller than in the case of consonantal sounds. Accordingly in all modern European languages, but very especially in English, the written representation of vowel sounds is entirely inadequate. Not only is one symbol used to denote several distinct sounds, but it is quite common to

<sup>1</sup> See Viator, p. 132, § 93 and Anmerkung 1.



find a double or diphthongal sound represented by a single symbol, and a single sound by a double symbol.

If however we put English (and Dutch) on one side, we find that in modern languages generally an approximately uniform character is given to the sounds represented by *a, e, i, o*. These sounds are single vowel sounds, and we have every reason to attribute them to Latin *a, e, i, o*, and to Greek *α* and *ι* respectively. Latin *u* corresponds to Greek *ου*=French *ou* (for Greek *ε* and *ο*, see below). Greek *υ*, Latin *y*, seems to correspond most closely to French *u*: and sounds somewhat resembling this are found in German and Welsh. Most of these sounds occur in English also, but the symbols by which they are denoted are not uniformly employed, and often have a value peculiar to this one language. Accordingly it is better to start from French and Welsh than from English in studying the character of the Greek and Latin vowels.

The distinction between *short* and *long* vowels was more plainly marked in the classical languages than in modern English: and this difference must be kept entirely distinct from that between short and long syllables; thus in *ἔσπερος*, *Vesper*, the first vowel in each case is short, the first syllable long. In a reformed pronunciation the distinction between short and long vowels should be carefully observed: and the student should endeavour to master the quantity of the vowels in new words in Greek and Latin, as he learns the words themselves. But where in Latin a vowel is followed by two consonants, its quantity is only known to us in a certain number of cases<sup>1</sup>: e.g. vowels are long before *nf, ns*, as in *infāns*: in other positions we consider that the only practical course is to follow the English method of making the vowel short.

Further distinctions can be traced with the help of English illustrations: but to use these it is necessary first to understand the nature of the sounds represented in English by the vowel symbols and those used in connexion with them. For shortness' sake we may denote the values given to *ā, ē, ĭ, ō, ŭ* in Latin, as stated in the table above, as the

*Quantity.*

*The English vowels.*

<sup>1</sup> See Lindsay, *Latin Language*, p. 133 ff.; and observe that the difference of quantity in Latin produced differences of quality in the derived vowels in Romance; thus Lat. *stēlla* gives Fr. *étoile*, Ital. *stella* with close *e*; while Lat. *bēllum* 'beautiful' gives Fr. *bel*, Ital. *bello* with open *e* (Meyer-Lübke, *Gram. Lang. Rom.* i. pp. 91 and 153).

normal values of these symbols. English short *a*, *e*, *i*, *o* have then, in the examples given as equivalent to Latin *a*, *e*, *i*, *o*, the normal values.

It is, however, not easy to find clear examples of normal short *a* in English: the English short *u* (as in *but*, *uncertain*), does not greatly differ from it, but a more exact equivalent is found in the first element in each of the English diphthongs heard in *mine* (*main*), *how* (*hau*). The English spellings *er* in *better*, *e* in *the man*, *a* in *again*, alike represent an indistinct vowel sound, which is chiefly found in unaccented syllables, and is denoted in phonetics by *e* reversed (ə). It closely resembles French *e* in *me*, *te*, and Welsh *y* in *yn*, *yma*.

English long *a* and *o* in most cases represent a long vowel sound followed by a slight *i* and *u* sound respectively: this sound is written as a consonant in *bay*, *low*, and, though unwritten, is none the less heard in *bane* (*bēin*), *stone* (*stōun*). Hence English long *a* may be represented by *ēi*, long *o* by *ōu*. Although in each case two distinct sounds exist, it is not easy without practice for an Englishman to pronounce the first separately.

English long *i* in most cases would, on the same principle, be denoted by the combination *ai* (*ā + ĭ*), and long *u* by *yū*: from the latter normal *u* can easily be deduced, as it is common in English under the form *oo*.

English *ai*, *ea*, when followed by *r* are equivalent to normal *ē* lengthened: e.g. in *air* and *bear*: and so *oa* to normal *ō* lengthened, in *oar*. In these words the final *r* is but slightly heard, and nearly equivalent to the indistinct vowel sound, so that *air* (English) or (*b*)*ear* (English) is little more than *ēā* (normal), and *oar* (English) than *ōā* (normal).

English *ee* = *ea* in *lean* = normal *ī*.

The short vowels described<sup>1</sup> are uniform in quality, and are known as 'open' or 'wide' vowels (see below). But the long vowels are of two kinds. Some differ from the short vowels just mentioned only in quantity or duration, and these are open long vowels. Such are *ē* in English *air* (*ēā*), *bear* (*ēā*), French *père*, *il mène*, Greek *ἦν* and Welsh *hen* (in many districts): *ō* in English *oar* (*ōā*), *bore* (*ōā*), Greek *ὥρς*, Welsh *pob* in many districts, Italian *popolo*.

But more often the long vowels differ also in quality: *ē* being

<sup>1</sup> Observe that Greek *ε* and *ο* are close and were therefore omitted above.

somewhat nearer to *i* than *e* is, and so *ō* to *u*. [This may readily be felt by pronouncing in succession (1) *ā*, *ē* lengthened, *ē*, *ī*; (2) *ā*, *ō* lengthened, *ō*, *ū*.] Thus we obtain long close (or narrow) vowels, so called because the channel through which the stream of voice passes is specially narrowed in their formation; e.g. *ē* in English *bay*, (*bēi*), *bane* (*bēin*), French *état*: this sound occurs in Greek *αἶς* (at 450 B.C.), Latin *sedī*. Similarly *ō* in English *bone* (*bōun*), French *chose*, Latin *nonus*, is formed with 'narrowing of the voice.' The same tendency can be observed (but less clearly) in *ī* in French *six*, and *ū* in English *rude*, etc.

So far as *ē* and *ō* are concerned, the distinction is of some practical importance in Greek and Latin. Greek distinguishes in writing both the short and long close vowels *ε* and *ει*, *ο* and (in early Attic<sup>1</sup>) *ου* from the open long vowels (*η* and *ω*). Latin *ē* and *ō* were close; but in the fourth century A.D. *ae* had come to be pronounced as the open long vowel corresponding to *ē*, so that *equus* and *aequus* differed only in length of the first vowel. The change seems from Varro, *Ling. Lat.* vii. 26, to have begun even in classical times: but this passage does not give us enough data to determine exactly how far it had then gone: and we have therefore recommended in the table that *ae* should be pronounced as a diphthong, since it is of great importance that the syllable *ae*, so common in inflexional endings, should be at once recognisable in the oral work of a class.

In vulgar Latin the classical distinctions of quantity were much obscured by the effect of the stress-accent, with the result that (close) *ē* and (open) *ī* became identical in pronunciation, and similarly<sup>2</sup> (close) *ō* and (open) *ū* ran together. This development is of importance in tracing the connexion between Latin and the Romance languages. Thus the following examples show the normal representation of the Latin vowels *ē ē ī ī*, occurring in accented syllables, in modern French.

Latin <i>ē</i> = French <i>ie</i> :		<i>pedem</i> , <i>pied</i> ; <i>heri</i> , <i>hier</i> .
<i>ē</i>	oi :	<i>tres</i> , <i>trois</i> ; <i>habere</i> , <i>avoir</i>
<i>ī</i>		<i>viam</i> , <i>voie</i> ; <i>fidem</i> , <i>foi</i>
<i>ī</i>	i :	<i>filum</i> , <i>fil</i> ; <i>venire</i> , <i>venir</i> .

Similar distinctions are found in the history of Latin *o* *ō* *u* *ū*, see Meyer-Lübke, *Grammaire des Langues romanes*, §§ 118 ff. and 183 ff.

<sup>1</sup> It is probable that even as early as the classical period *ou* had become still closer, and = Lat. *ū*.

<sup>2</sup> Except in one Romance language, see Meyer-Lübke *ll. cc.*

English *ee, ea* are usually followed by an indistinct vowel sound before *r*: the *r* is also sounded except when final, so that *peeress, dearest*, are pronounced almost as *pīeres, dīarest*. This should be avoided in Latin: e.g. *audirem* should be pronounced (save for accent), as *audī rem*, not as *audiōrem*: for the double sound would have been represented in Latin by *ie* as *īe* in *fīerem*.

The short *ɪ* sound is favoured in English at the end of words, as in *lady, cheery*: but this sound should not be introduced for Latin final *e*, as in the English pronunciation of *triste, posse*. Except for the different position of the break at the end of the word *parce tibi* and *parcet ibi* are pronounced alike.

#### ACCENTUATION.

There is no doubt that in the Classical period of Greek the accented syllables were pronounced on a higher pitch or note than the unaccented, and not with more stress, not, that is, with a stronger current of breath and more muscular effort. Therefore, unless and until the student is capable of giving a purely musical value to the Greek signs of accent, they are better disregarded altogether in pronunciation; that is to say, we should certainly make our pronunciation more, not less remote from that of the Greeks themselves if we gave to their accented syllables the same stress as we do to the accented syllables in English. The current method of pronouncing Greek words, in respect of accent, by the Latin rules, though of course equally unscientific, is, in itself, a no larger inaccuracy. Perhaps the most practical reform that could be suggested would be to pronounce Greek words as far as possible with an even degree of stress on all syllables, as approximately in modern French.

In Latin the accent had undoubtedly a musical character, but it also implied stress, though not such forcible stress as in English, nor such as involves any slurring or indistinct articulation of the unaccented syllables. The student should therefore be careful not to shorten the vowel

of the syllable which precedes the accented syllable in such words as *audiēbāmus*, *amābātur*. The most important laws are (i) that words of two syllables are accented on the first, (ii) that words of three or more syllables are accented (a) on the last syllable but one if that is long, (b) on the third syllable from the end, if the last but one is short. These laws are correctly observed in the 'English' pronunciation: e.g. *ámat*, *vituperáre*, *régerem*, *compédibus*. Welsh-speaking students, accustomed in almost all words to accent the last syllable but one, need to be careful in the two instances given last, and to avoid such mispronunciations as *regérem*, *compedibus*.

It is necessary to guard the English student by pointing out that the Greek and Latin vowels possess the qualities which have just been described in whatever position of the word they may occur; for instance the three syllables of ἔχ<sup>ε</sup>ρε and the three of *regere* should be pronounced with exactly the same respective vowel-sounds, *ε* and *e*. But in English almost all vowels in unaccented syllables are pronounced (except in special cases, where the nature of the following sound affects the vowel) simply as the indeterminate, colourless vowel *ə* which was described above; as in *villa*, *better*, *the wind*, *author*: in careless speech even *i* in *authority*, etc. is given the same sound. The student should distinguish the vowels in the unaccented syllables of *τίνα*, *τίνε*, *mensa*, *imber*, *turtur*, as well as those in accented syllables like *vir*, *vēr*, *fūr*.

Quality in  
unaccented  
syllables.

## APPENDIX.

### NOTE ON THE GREEK ASPIRATES.

What was the pronunciation of  $\theta$ ,  $\phi$ , and  $\chi$  in Athens in the fourth century B.C.? It cannot be said that the evidence is full enough to provide us with a complete and precise answer to this question. How much is certain and how much we must for the present be content to regard as matters of probability merely will best appear from a summary of the chief considerations which bear upon it. The general limits of our knowledge are stated very clearly by Brugmann (*Grundriss d. Vergleichenden Sprachwiss.* ed. 2, Vol. I., p. 655) from whom the following sentences may be reproduced :

"The Tenuis Aspiratae of pro-ethnic Greek  $ph$ ,  $th$ ,  $kh$ , no doubt remained unaltered in most dialects down to a period within the historical epoch. In course of time they were ultimately converted into Breathed Spirants ( $f$ ,  $\beta$  (Eng.  $th$  in *thin*),  $ch$  (in German or Welsh), probably through the intermediate stage of Affricatae ( $pf$ ,  $t\beta$ ,  $kch$ ). But we have not now the means of tracing precisely in its various stages at different times and in different localities the gradual progress of this conversion. The different dialects did not all advance in this matter at the same rate..... The genuine Aspiratae were maintained best and longest in Attic. This is especially clear from the appearance of such forms as  $\xi\chi\omega$  [instead of  $\xi\chi\omega$ , see below] with the first syllable aspirated through assimilation to the second; from the representation of  $\phi$ ,  $\theta$ ,  $\chi$  by  $p$ ,  $t$ ,  $c$  respectively in Latin of the early period [e.g. *purpura* =  $\pi\omicron\rho\phi\acute{\upsilon}\rho\alpha$ , *tus* =  $\theta\acute{\upsilon}\omicron\varsigma$ , *calx* =  $\chi\acute{\alpha}\lambda\iota\xi$ ] and by  $ph$ ,  $th$ ,  $ch$  in the writing of the educated class at Rome from about 100 B.C. onwards..... In Egypt even in the second century A.D. they were still aspirates, except only  $\theta$  before  $\iota$  [as is shown by their transcription into Egyptian characters], see Hess, *Indogerman. Forschungen* 6. 124." To this Brugmann adds a few cases in which the fricative pronunciation is

proved for certain dialects (in the third and second centuries B.C.; see his *Griech. Grammatik*, ed. 3 (1900) p. 105 where some further details are given).

Can we hope to add anything to Brugmann's discreet silence as to the earliest date at which the Affricate stage was developed in Attic Greek?

It is acknowledged by all scholars that the sounds in Attic of  $\phi$ ,  $\theta$ ,  $\chi$  in the sixth century B.C., when these symbols themselves had not yet been completely established in use in place of the older fashion<sup>1</sup> of writing  $\pi h$  ( $\Pi \Theta$ ) etc., and when in metre they never made a preceding vowel long by position, were pure aspirates. Now let us ask first:

A. What grounds are there for supposing that these sounds remained unchanged in Attic till the fourth century B.C.?

1. The most important evidence is that to which Brugmann briefly refers in the passage just quoted, namely the very frequent mis-spelling of words containing aspirates in the fifth and fourth centuries B.C. in Attic inscriptions, the record of which is collected in Meisterhans-Schwyzler, *Grammatik d. Attischen Inschr.* ed. 3, 1900, p. 102. But to interpret the evidence correctly it is necessary to sift it a little more closely than has yet been done.

(a) Such spellings as  $\epsilon\chi\omega$  for  $\epsilon\chi\omega$  show quite clearly that the Aspirates contained an  $h$  sound which careless speakers added to other syllables in the same word.

(b) Such spellings as  $\chi\theta\acute{\omega}\nu$  for  $\chi\tau\acute{\omega}\nu$  and  $\epsilon\upsilon\theta\rho\chi\acute{o}\upsilon\nu\tau\iota$  for  $\epsilon\upsilon\theta\rho\kappa\acute{o}\upsilon\nu\tau\iota$  show that the combination of this  $h$  sound with a preceding plosive was written (by the authors of the particular insc.) by means of the aspirate symbol,  $\tau + h$  being written  $\theta$  in  $\chi\theta\acute{\omega}\nu$ .

(c) Such spellings as  $\kappa\theta\acute{\omega}\nu$  (and sometimes  $\kappa\tau\acute{\omega}\nu$ ) show that when an  $h$  was subtracted from an aspirate the result was written (by the authors of the particular insc.) as a plosive,  $\kappa$  instead of the  $\chi$  which had lost its  $h$  to the following syllable.

Now if we had only such cases as (c) we could maintain, I think, with absolute confidence, that they established a quite enormous probability in favour of the view that at this date  $\kappa + h$  was the only value of  $\chi$ , and so with  $\theta$  and  $\phi$ .

<sup>1</sup> On this see Kirchhoff's *Studien zur Geschichte d. griech. Alphabete* (ed. 4, 1887, e.g. p. 172) or Roberts' *Greek Epigraphy*, i. almost *passim*, i.e. wherever the history of  $\phi$  and  $\chi$  is discussed in the various localities; for  $\phi\sigma$ ,  $\chi\sigma$  in the old Attic alphabet see Meisterhans-Schwyzler, p. 3.

But the examples like (a) where the *h* is added to another syllable, but leaves the *χ* unaffected in its original place, do not exclude (though of course they do not directly support) the supposition that in the pronunciation of the *χ* (or *φ* or *θ*) some slight fricative sound had already crept in after the plosive and before the *h*. And examples like (b) do not necessarily exclude it either, because while it is clear that a fricative pronunciation is not likely (at all events not nearly so likely as the *h*-sound) to be transferred from one syllable to another, yet the fact that *θ* was used in *χιθών* (being the only available symbol) to denote merely an *h* added to *τ* does not amount to an absolute proof that it did not commonly denote *τ* + a faint *th* + *h*.

Now from the fourth century and later Meisterhans-Schwyzler gives 15 examples of (c) to 11 of (b): in the sixth and fifth centuries there are 11 of (a), 10 of (b) to only 2 of (c). Altogether the proportion in his examples is

$$11a : 21b : 17c.$$

In other words the examples of (a) and (b) together are nearly twice as numerous as those of (c), in spite of the fact that no examples of (a) can occur after 403 B.C. since the symbol for the *h* went out of use with the rest of the Old Attic alphabet in that year, when the Ionic alphabet was adopted by law<sup>1</sup>. These numbers are significant<sup>2</sup>.

Subject, however, to these comments it is clear that from these Attic spellings taken alone we should judge the pure aspirate pronunciation distinctly more probable for the fourth century in Athens. It is worth noting, however, under (c), that while there are 7 examples of *χ* losing its aspirate and appearing as *κ*, and 4 of *θ* appearing as *τ*, the only words in which *φ* appears as *π* are *Πώσφορος* and *Περσεφόνη*, there being three examples of each.

2. The development of *οὐθεῖς* (fem. *οὐδεμία*) from *οὐδ' εἷς* and the occasional spelling *οὐθ' οἱ* for *οὐδ' οἱ* (see Meist.-Schwyzler, pp. 104, 258). These are roughly parallel to the examples under (b) just discussed.

3. The writing in early Latin of words derived from Greek words containing aspirates, like *calx* 'cup' from *χάλιξ*. This representation is not exact, but it clearly suggests that there was a definite plosive element in the Greek aspirates. Observe that the examples of this are very numerous and that a large number of them are of the class that came over *uiua uoce*, by actual spoken intercourse, e.g. *purpura*, *apua*, *tus*, *calx*.

<sup>1</sup> It is well to state that I have regarded *χιτών*, *κάλχη*, *Καλχῆδων* and *Φερσεφόνη* as the normal forms, and have only counted variants from them.

<sup>2</sup> For statistics it seemed best to start from Schwyzler's examples, though his collection is not complete. He omits all examples from Vases, referring merely to Kretschmer's *Gr. Vasenschriften*, pp. 149 ff., 156 ff. Those that Meisterhans has included from this source (in his second edition, 1888) raise the examples of (b) to 33 instead of 21; for instance, the signature of the vase-painter *Χαχρυλίων*, which I have only counted as one of the 33 examples, though it occurs on a number of vases (*Καχρυλίων* is less frequent).



4. The adoption of *ph*, *th*, *ch* by educated Romans, beginning about 133 B.C., and regular from 100 B.C. onwards, in transliterating Greek words, or spelling words derived from Greek in which the aspirate was customarily pronounced, as in *Corinthus* = *Κόρινθος*. Cicero's very interesting remark<sup>1</sup> (*Orator* § 160) shows that an *h* sound was clearly heard in *pulcher* and *triumphus*, both words borrowed from Greek; but it does not necessarily follow that there was no fricative element as well. He clearly reflects the instruction of his teacher. Priscian prescribes a pure aspirate pronunciation (*p + h*, etc.) six centuries later, when it is absolutely certain that this represented only grammatical tradition, not the pronunciation of his day. The statements of Diomedes (fourth cent. A.D.) show conclusively that by that date *φ*, *θ*, *χ* were mere fricatives. See Lindsay's *Latin Lang.* pp. 58 and 100.

5. Finally we have the evidence of the transcription of Greek aspirates into the alphabets of non-European languages, e.g. on some Graeco-Indian coins of the second century B.C. (Bendall, *Proceedings of the Camb. Philol. Soc.* Nov. 12, 1903, in the *Camb. Univ. Reporter* of Nov. 24), and in Egyptian papyri of the second century A.D. (cited above by Brugmann). Now in both cases the Greek *φ*, *θ*, *χ* are represented by the symbols of the pure aspirate sounds of the languages into which the words are borrowed.

This gives us reason for thinking at least that the *h* sound clearly survived in Greek, and probably also some part at least of the plosive element. But it cannot be pressed so far as to prove that there was no other element in the Greek sound; any more than the fact that the spirant *f* of Latin and the other languages of ancient Italy was always and only represented in the Greek alphabet by *φ* (e.g. *Φλάουιος* = *Flavius*) proves that *φ* had exactly the sound of *f*;

<sup>1</sup> Quin ego ipse, cum scirem ita maiores locutos esse ut nunquam nisi in uocali aspiratione uterentur, loquebar sic, ut *pulcros*, *Cetegos*, *triumpos*, *Cartaginem* dicerem. Aliquando, idque sero, conuicio aurium cum extorta mihi ueritas esset [i.e. 'when the pronunciation I heard all round me broke down my obedience to the grammarians' rules which I had been taught'], usum loquendi populo concessi, scientiam mihi reseruau. *Orciuos* tamen et *Matones*, *Otones*, *Caepiones*, *sepulcra*, *coronas*, *lacrimas* dicimus quia per aurium iudicium semper licet [i.e. 'in these latter words the addition of *h* is a mere vulgarism']. The origin of this vulgarism has recently been shown to be Etruscan, see my notice of Schulze's *Lat. Eigennamen* in the *Classical Review*, Nov. 1906. On *triumphus* see *Ital. Dial.* p. 230; on *pulcher* (from *πολύχρως*, through the probably Oscan *πολλαχρο-*) see *Ital. Dial.* p. 48. *Carthago* is of course Semitic, *Cēthēgus* probably Etruscan or Etrusco-Greek.

we know (e.g. from Quintil. 1. 4. 14 and 12. 10. 29) that there was an audible difference. All that these transliterations prove is that the degree of resemblance between the transliterated sound and the transliterating symbol was closer than between the same sound and any other symbol in use in the given locality.

But why, the reader will naturally ask, should we seem anxious to reduce this evidence to its narrowest interpretation? Why not give it the benefit of a liberal instead of a grudging interpretation? The answer is: in order to reduce to as narrow limits as possible the apparent contradiction between the conclusions which would, from it alone, seem reasonable, and the evidence of an opposite nature, to which we must now briefly turn. Some of this was put forward by Dr Elizabeth Dawes in her dissertation on the *Greek Aspirates* (London, 1895), though her argument is to some extent weakened by lack of critical method.

B. What grounds are there for attributing a partly fricative pronunciation to  $\phi$ ,  $\theta$ ,  $\chi$  in Attic in the fourth century B.C.?

1. The cases, beginning<sup>1</sup> with Aristophanes (*φιλόσσοφον Eccl.* 571) and continuing down to the Christian era, in which  $\phi$ ,  $\chi$ ,  $\theta$  appear as double consonants, making a preceding vowel long by position, as in the Latin *bracchium* from *βραχίων*, Low Latin *struppus* from *στροφόσ*. For some other examples see Lindsay, *Lat. Lang.* p. 58. It is reasonable to assume with Gustav Meyer (*Gr. Gramm.* Ed. 3, p. 287) that this innovation indicates the beginning of the affricate stage. It is clear that a single case of such a prosody, which defies the traditional poetical usage in Attic, is weightier evidence than a great multitude of cases in which the traditional usage is obeyed; but there are parallel examples of the metrical lengthening before  $\phi$ , e.g. Kaibel, *Epigrammata Graeca ex lapidibus collecta*, 60. 1; *Notiz. d. Scavi di Antich.* 1888, p. 282 (*philosōpha* in a Latin metrical epitaph of the last century B.C.); and others given by Schulze, *Quaestiones Epicae*, pp. 256, 232 footnote. Probably all of these are later than the fourth century B.C., but in Attica itself we have the names *Πιτθεύς*, *Πιτθιος*<sup>2</sup>, probably derived

<sup>1</sup> Cases from earlier poets must hardly be quoted as evidence of Attic use; and even Aeschylus (*Choeph.* 1049) may be copying the Epic or Aeolic examples. Homeric lines beginning with e.g. *Ζεφϋρέη, ἔπιτόνος*, or ending with e.g. *ὄφιν* probably represent variations of metre, not of pronunciation: see Schulze, *Quaestiones Epicae*, p. 430.

<sup>2</sup> This third century example would be very strong evidence but for the fact that some names, originally pet-names, were formed by an intentional doubling of the consonant, e.g. *Σαμφώ*, *Ξεννώ*.

from the deme Πίθη (though not used in a geographical sense) at the end of the third century B.C. (C. I. A. II. 977 uv. 9, 250—150 B.C.); and in imperial times it is clear that Πιθεύς is used in the geographical sense (C. I. A. III. 908; III. 1230 b; III. 226); the regular spelling in Attic inscriptions being Πιθεύς (Meisterhans-Schwyzer, p. 80, to which add Gustav Meyer *Gr. Gramm.* Ed. 3, pp. 288 ff.).

Such borrowings into Latin as *bracchium* are no doubt later in date than those like *apua*, *Corintus* etc., and point to a change in Greek pronunciation. Yet *bracchium* is older than Plautus<sup>1</sup>.

2. The evidence that in Aeolic (from an early date, as the forms Βάκχος, Βρόκχος, and the later μετῆλλακχότα show), Laconian, Cretan and Boeotian, in or before the fourth century φ, θ and χ had become affricatae or fricatives. (See Brugmann's *Gr. Gram.* Ed. 3, p. 105 f., and Gustav Meyer *Gr. Gram.* Ed. 3, p. 287.) Now it seems at least likely that such a change, once established in Boeotia, would affect to some extent the speech of the commoner class of their Attic neighbours. The pronunciation of Laconia, which Aristophanes ridicules (ναὶ τῷ σιώ for ναὶ τῷ θεώ), is hardly likely to have affected the speech of Attica.

3. The remarkable use of φ in the Eteocretan fragments (written in Ionic alphabet and dating from about 400 B.C.) to denote what can only be some kind of spirant arising from *p* before *t* (*adopte* probably meaning 'optione,' 'libenter,' like Osc. *ufteis* = Latin *opt(ati)*), as well as before *s* (*-oφsano*). See the *Annual of the Brit. School at Athens* VIII. p. 146, with the footnotes.

It is difficult to separate this from the early Greek use of φσ for ψ (in an Attic inscription as late as of 439 B.C., see Meisterhans p. 3), or, more generally, to believe that ξ and ψ had precisely the sound of κσ and πσ; for if so, why were these additional symbols needed? And this brings us very near the unsolved question of the sound denoted by χ, θ, φ in the combinations χθ, φθ, which is however too complex to be discussed here. See Brugmann and Meyer *ll. cc.* and the authorities they cite.

4. Why did the Romans change their transliteration of the Greek Aspirates from the simple *p*, *t*, *c* to *ph*, *th*, *ch*? Was not the additional sound which they heard so clearly in the second and first centuries B.C. something more than merely an *h*, though this was the only means they had of writing it?

<sup>1</sup> Its use in *Miles Glor.* I. 1. 26 shows that it was a completely naturalised word. In Cato it is even applied to trees.

5. Finally, in the first century A.D., while all the Greek school-masters at Rome were busy (as they were for one or two more centuries) inculcating the pure Attic pronunciation of the aspirates, we have on the walls of Pompeii (overwhelmed in 78 A.D.) the indisputable evidence of the *graffiti* of certain persons content to spell as they spoke that to some people in Italy at any rate  $\phi$  sounded like  $f$  (*Dafne* 'litteris sat uetustis' C. I. L. iv. 680; *Fyllis* *ibid.* 1265 a; *Trofime* 2039; *Filetus* 2402).

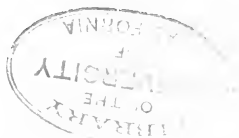
None of this evidence demonstrates that a fricative pronunciation had established itself even on the most vulgar lips in Athens in the fourth century B.C. But it does appear a possibility that under certain conditions the pronunciation was that of affricates.

My own present interpretation of the data, if it be worth setting down, might be represented by some such conjectural table as this, where  $f$  denotes a labiodental spirant,  $f'$  a bilabial spirant ("like the sound made in blowing out a candle"):

At 450 B.C. at Athens  $\phi = p + h$ , and so in educated speech down to at least 150 B.C., and in the teaching of Atticist grammarians at Rome for another two or three centuries;

but at 400 B.C. in colloquial speech medially at least	$\phi = pf' + h$
at 150 B.C. in vulgar speech in Italy	$\phi = f' + h$
at 50 A.D.       "       "       "	$\phi = f''$
at 350 A.D. $\phi = f$ .	

R. S. C.



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